APPENDIX A

IN THE

UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF OHIO
WESTERN DIVISION

Civil Action No. 7827

OLYMPIC FASTENING SYSTEMS, INC.,

Plaintiff,

v.

TEXTRON INC.,

Defendant.

Memorandum Decision
Filed August 10, 1973

This is a patent infringement case initiated by declaratory judgment complaint filed by the alleged infringer Olympic, and defended and countered by the patent owner Textron. The patent involved is USLP 2,931,532 (Gapp Patent applied for April, 1955 and granted April, 1960). The claims involved are claims numbered 1 and 2. The specific field involved is the "blind fastener" one—and, as a practical matter, more specifically in the aeronautical production field (to distinguish, shall we say, from such blind fasteners as the closure on ladies' bras). The gut issues are validity (and really obviousness) and infringement (no trespass into a boundary precisely limited by the claim).[1]

[1] This case was submitted about a month ago and proposed findings and conclusions are in the process of being submitted by both sides. The present calendar and docket of this Court require an effort at this time at what will hopefully be a Rule 52 compliance. Upon the filing of the proposals, they will be considered as requests for supplement and amendment and dealt with accordingly.

Appendix A

VALIDITY

A blind fastener is a rivet. The first rivets used were used under circumstances in which both sides of the rivet extended beyond the things which were to be riveted together could be seen and worked on. In time there arose circumstances under which it was desirable to obtain the result of riveting when one side or one end of the rivet could neither be seen by the worker, nor, as a mechanical matter, worked on by him. The fuselage of a modern aircraft exhibits examples of riveting of various plates or strips at places under circumstances in which no one could see or work in back of the lower strip while the riveting was being accomplished—nor could you get there for inspection or checkup purposes after the work was accomplished without destroying the work. The work is done on the seeing side. The other side is the blind side. Hence the words "blind rivet"—meaning for riveting under circumstances where there is a blind side.

Whatever the facts may currently be, insofar as this record is concerned, there are presently these, at least desirable, if not absolutely necessary results to be accomplished in blind riveting:

First, the rivet must be structural, that is to say, it must not be hollow when you get through but it must become, as it were, a part of the structure on which one is working—meaning that the sides and the top and the bottom of the rivet must be pressed tightly against the structures involved and meaning that what is in the sides and between the top and bottom must be filled. So, basically, the rivet should not be hollow and the process should include hole-filling of what would otherwise be the hollow to the extent that one might almost term the rivet itself as much a part of the structure as the rivet in a building

steel girder becomes a supporting part of the structure. Of course, basically the first attribute that is highly desirable, if not absolutely necessary in this field, is what is referred to as clinching or clamping, and that means this. The more the riveting process draws the pieces that are being worked on together and the tighter it holds them together, the better it is. Again, a little space in between, no matter how small, leaves an absence of structure; or translated into the aeronautical field, means an absence of desirable hold-together strength. While you might be able to accomplish the closeness by outside mechanical means accompanying or preceding the riveting, such is expensive for one thing, and certainly nowhere near as good as clamping together tightly by the rivets themselves and, of course, that, in the aeronautical field, is easy for anybody to see. Then we mention this attribute, since it is repetitively in the record of this case, simply because the rivet names involved are Cherry Lock and Olympic-Lok rivets—a blind rivet should be locked some way in its place. The locking came along after the patent with which we are concerned but only shortly after. And that is the why of the references to Olympic-Lok rivets, and Cherry Lock rivets, the one name describing generally the rivets manufactured by the plaintiff and the other describing generally the rivets manufactured by the defendant. The patent owner's initial manufacture was referred to as the High Clinch rivets, for reasons we shall see. For the purposes of this case, while the lock rivets are involved, the locking attribute may be forgotten. That involves other patents since obtained.

Of course, those who started out historically to satisfy the needs for a blind rivet set sail on a course initially and, having arrived at their destination, stopped there for a while. The first blind rivet, for purposes of this case, was

patented in 1939 and is known as the Cherry Patent No. 2,183,543. Cherry taught the accomplishment of the first requirement of a blind rivet. After Cherry, one knew how to make and use a rivet where a blind rivet was required, i.e., where you had a blind side. In fact, Cherry also taught how to use a hollow blind rivet and get some clinch or clamp out of it. As we say, the Cherry rivet was hollow; it did not do any hole filling, or stated another way, nor did it purport to be a structural rivet.

The second pertinent patent in the area is known as the Huck patent. It was applied for in 1944, granted in 1950. It is owned by a currently operating company which manufactures rivets and is one of the major operators in the field. Cherry, incidentally, was owned by the predecessor of the defendant, and the defendant company is one of the major manufacturers in the field. Huck overcame the lack of, or to put it the other way, contributed the attribute of hole-filling or structural. Huck is the prior or existing art in the field most pertinent to the validity question, was carefully and repetitively considered by the Patent Office during the prosecution of the Gapp Patent, and must be dealt with at some length to apply the first step in the three-step test "established by the Sixth Circuit in determining the question of what constitutes obviousness." See *Westwood* and the more recent *Parker Sweeper* cases. As we have said before, the gut validity question in this case is obviousness, or it is a 103 case. No issue has been really raised with respect to novelty or utility.

The Huck rivet is depicted "puffed up" by Plaintiff's Exhibits numbered 4. It consisted of a tubular rivet. It had a head and when the tubular rivet was inserted in the holes of the two or more pieces that were to be riveted together, the head would rest against the side that could be seen, or the outside. Before the tubular rivet was put

in the holes, there was placed inside the hollow tube of the rivet something which we will describe. Insofar as the rivet itself is concerned, this thing we are describing and which is one thing in the sense that what we are now describing when you put it all together is one joined or fused metal—insofar as what was inside the rivet itself is concerned, it was metal and tubular and of a size which fits snugly against the inside of the rivet tube. That part of this piece of metal was a shank. On the "seeing" side, the part—also metal was called the tail.

It probably is well to emphasize again that while we are describing these in parts, they are not parts in the usual use of that word in that all these parts become the unified whole. Anyhow, the tail and the shank are of the same diameter and, of course, they are smaller than the rivet blind head, because both of them have to get through the rivet tube. Now, on the blind side, there was a part right next to the shank which was what one calls a tapered shoulder, or a section which tapered outward and as it tapered outward the diameter became larger than the inside diameter of the rivet tube and larger than the outside diameter of the shank. Following the tapered shoulder was the head, which is called the "blind head" because that is the head on the side you cannot see or work on. That head has a somewhat larger diameter than the shank. That is what the curving shoulder was for.

That head also, going now away from the shoulder and further toward the blind side, has for a while a constant diameter, and that constant diameter is a little bigger than the inside diameter of the tube and the portion we are now talking about would be about the same length as the inside of the rivet because that is what you are going to use to fill the hole in the rivet. And going still further along now to the blind side comes another curved shoulder because

we are going to a larger diameter and then a head, i.e., the head of the rivet on and at the end of the blind side. And this head has a considerably—speaking relatively—larger diameter than the part we have described as that which was going to be used to fill the hole.

Now, inside this thing we are describing is a stem or a wire extending from at least well up into the tail clear down to, or close to, the end of the blind head. Returning again to Plaintiff's Exhibit 4, from that effort to describe it in words, in Huck the shank is inserted so that the tail extends upward or outward from the "seeing" side of the rivet and the head side is on the other side—that is done, of course, as part of the manufacture so that on the job the rivet thus assembled is inserted into the hole. Pulling force is applied to the tail by means typically of a pulling gun and this pulling force draws into the hole what we have been describing as the part used to do the hole filling. As it is drawn into the hole, the first tubular shoulder causes the tubular rivet itself to expand outwardly a little bit against the inside of the blindest piece of metal and that having been accomplished, the wire drawing will next pull and that hole will be filled by the part we have described as being for that purpose. In the process of doing so, of course, the diameter of what is being drawn in is going down somewhat. Two things related thereto—one, as this is drawn through and this metal has to constantly get smaller, the hole fills up; so, you are getting a structural rivet. Second, because of the exertion of this force outside, the plates you are riveting together may part and you are apt to get an extrusion at that point, so Huck was interested in keeping these plates together in the sense that he was interested in not forcing them apart.

When you get to the second curved shoulder, the drawing force would curlicue out a little bit further than the tubu-

lar rivet at the point of its juncture with the inside or the blind side piece of metal and then something had to give because of the relatively substantially larger diameter you were coming to. The blind side of the Huck rivet was upset at that point. There were a couple of ways that you could stop at that point. One of them—the rivet drawing gun could be calibrated with respect to the sizes involved to stop there. While we are back to that gun, of course, it goes without saying that the nose of the gun rests against the outside of the "seeing" metal so that in this process all the metal involved is drawn toward the gun. During this trial this Court could not understand, and maybe still doesn't, why that would not of necessity draw the two pieces of metal together, or clinch. We think we do and it is this. If the filling part is coming through the tube, of course, a considerable amount of pressure is being exercised outwardly and evidently that pressure is such that it prevents any pull together. In any event, there will be a fact finding that there is no clinch or clamp in Huck—whatever the reason may be.

And now to digress backwards to the second way to stop this draw through process—the construction of what you are dealing with may be such that the wire at a given point will not stand the further pressure involved when you hit the biggest diameter or when you have upset the blind head and the tail breaks off.

At this point it might be well to emphasize that obviousness in this case is in the dimension field. One who reads these patents and one who is also just a layman is baffled by this—in the Gapp patent for instance, there is scarcely anything said about dimensions as such or about types of metals, or about the characteristics of the metals involved. Huck does direct some discussion to that as does at least one of the others. The reason seems to be that

people in the art knew anyway, entirely apart from anything in patents, just what metals and what strengths and what dimensions, etc. etc., at a given time, were involved necessarily. The problems here relate to the reaction of different dimensions, or the different functions and results from the use of different dimensions.

To recap Huck from a validity point of view, it was directed to the problem of getting a structural and not a hollow rivet. It did involve wire drawing and taught that. It did involve the initial and immediate fashioning of a little shoulder or a little curlicue at the start, or a little upsetting, but this was related to getting the rest of the rivet tube to stay where it was and not to be clinching or clamping. While we are on this word "curlicue" again, in the record sometimes that is called "tulip." Huck stopped his drawing with a knob, that is to say, what stopped the inside from coming through the tube was the knob at the inside end in Huck. Gapp's stops generally with the predetermined calibration and a cutting with a gun, but that is not important at all. Either is reversible or usable.

Huck did not teach dimensions—evidently because such would be like teaching Blackstone to a Cardozo. Of course, it was taught in the sense that one dimension had to be big enough to form the tulip and one dimension had to be big enough to form the blind rivet head. That your dimensions have to be big enough to form somewhat of a tulip—or a little tulip, shall we say—and then you hole-fill and then you form the blind head. The emphasis was on the hole filling and Huck was really not directed at all to clamping or clinching.[2]

[2] While the above is the best this Court can do to describe the essentials of a blind rivet, objectively, we are not satisfied with it. In the defendant's pretrial statement the subject—structure, etc.—is well dealt with beginning with the third paragraph on page 2 and ending with the fifth line at the top of page 5.

Appendix A

The Huck rivet was the first structural or hole-filling rivet in the field and, as one could well imagine, received wide acceptance and specification and was a marked commercial success. It was specified by the military and the rivets manufactured under the Huck patent, by Huck and others, including the parties to this case, was generally referred to in the trade as the Huck or M.S. rivet. Incidentally, while we are speaking in the singular in connection with all of these rivet types, that is not so, as a practical matter there are many, many different sizes and variations, etc. We are concerned with the parts and principle involved in what makes the rivets tick and for that reason it is easier to talk about one in each class or type.

The Huck rivet, as we said, was not directed to the problem of clinching or clamping up and somewhat for the same reason that stopped Columbus when he saw land. The function being worked on and sought at that time was hole filling. So, in fact, the Huck rivet, as practiced, did not clinch or clamp. It is true that Huck taught no dimensions and therefore, being not limited as to dimensions, one experimenting under Huck, that is to say, one doing what Huck taught him to do and using certain dimensions, would have hit what Gapp hit. One of the expert witnesses in this case, taught by Huck and knowing about Gapp, produced a rivet which would clinch.

But the "knowing about Gapp" is important because up to Gapp it had not occurred to anybody to see what would happen if the diameter after the first tubular shoulder in Huck was made markedly bigger than the rivets being made under Huck.[3] The reason for it, among others, was that the wire pullable components were related to the

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[3] Or stated more accurately, if the shoulder were constucted so that it was a broader shoulder than that accepted in the hole.

necessities of hole filling, or the desirability of hole filling and it apparently had not occurred to anybody that maybe by ginning up the wire pulling strength, or wire drawing strength, and increasing the diameter beyond the first tapered shoulder, you might get another attribute that was desirable. Huck simply did not teach clamp-up—everybody missed any clamp-up lesson there was in it, if any. And there is an old saying that if all in the class flunk there is something wrong with the teacher. Clamp-up was an existing problem which survived for at least a decade and probably closer to fourteen years after Huck, from a practical point of view, and particularly in this trade we are dealing in, you did have to keep the plates that were to be rivited close together. That generally was accomplished by mechanical means as indicated by the exhibits. In other words, you used a vice to get them close together before your riveting started. Obviously that was expensive and just as obviously the type of clamping in a vice and the type of clamping as a result of riveting are two different cats.

Gapp worked on the problem for some four years. Another employee of his company worked on it for several years and that employee obtained a patent directed to the subject of clamping. The method involved was considerably different than Gapp and besides it did not work. Other companies in the field worked on this clinching problem. They were not successful, although all we have mentioned are experts and skilled in the field and were at the times involved. Whatever obviousness may or may not exist as a matter of law—and it is a question of law, of course—the simplest fact is that those skilled in the trade, working on the problem consciously and knowing about Huck, never saw anything in Huck that made Gapp obvious. Gapp did

not either, for that matter, as he candidly testified in this case. He hit it by accident, but, of course, the method of arriving at the invention is neither here nor there, i.e., whether by design or accident.

In 1954 the problem of clinching was solved essentially by redimensioning the blind head. Starting inside from the tubular rivet on the blind side and going inside or toward the blind side, we still have the first curved shoulder. When they talk about this in terms of Gapp, they refer to it as the joining portion because it is in the process of getting that inside the tube and maybe a little further that the blind head is upset and clinches the plates. The reason is this, the diameter of what comes next, that is the blind head, is bigger than the Huck rivet diameter was—enough bigger so that the upset comes before the hole filling starts, rather than after it is finished.

Some time in 1954 Gapp, working on the problem, accidentally wire pulled an M.S. rivet too far. As a result he pulled the tail section of the regular M.S. rivet [that is, the end of it with the knob, or the markedly bigger diameter] into the sheets that he was riveting and he had wire drawn, using the pulling sheet that he had to get through the rivet, and he was surprised that it had enough strength to wire draw the large section at all. He thought at the time that that pulling section would never withstand the force required to wire draw a plug section of sufficient diameter and by this accident he found that it did and this enabled him to construct a rivet which is structurally and functionally different than the Huck or M.S. rivet.[4]

Another way of describing the claimed invention, and perhaps better, would be this. Huck taught wire drawing

[4] What we have been referring to as the tube of the rivet is referred to interchangeably in this record as tube or sleeve.

to fill a hole and upset the head. In other words, Huck's diameters were related solely to hole filling. It taught wire drawing to fill a hole—and just that. Gapp taught that diameters, and particularly the enlargement of diameters had something to do with clamping or clinching and that if you used the correct diameter and in addition used sufficiently strengthened wire drawing, you could clinch first and upset your head first and still get your hole filling. Huck taught fill the hole and then upset the head. Gapp taught upset the head first and then fill the hole. The functions taught by Huck and Gapp are different, that is to say, what they tell you to work with functions differently. They are also structured differently. The conclusion of this Court would be based simply on these facts as heretofore recited that what Gapp accomplished was not obvious as a matter of law, but was inventive. We are aware of the recent expressions of the Sixth Circuit in the *Parker Sweeper* case and of the reference to "slight technological advance." On the other hand, we are also aware that many little things have been stamped as inventions by the Sixth Circuit and other appellate courts. For that reason, these fact findings in the secondary consideration field.

There was a long and unsatisfied need for a rivet in the aeronautical field which would clinch. The need was recognized and worked on for years by individuals extremely able in the field, both from a mechanical and theoretical point of view. At least one of them has been successful in obtaining more than one patent. This need was not only from a monetary point of view, but it was from a point of view of safety and desirability in a field in which metal strength—and the more and better you clinch, the harder it is to pull the metals apart—is vital. What Gapp found satisfied that need. The teachings of Gapp were welcomed

and accepted and applied not only with commercial success, but with commercial success in a regulated and specified field.

The aircraft industry, practically contemporaneously with the commercialization of Gapp, drew up requirements for an improved blind rivet which would clamp up (and do some other things we do not have to go into). What might be called trial heats or qualification tests were conducted. The Huck submission did not qualify—meaning Huck had not taught Huck how to clamp. Olympic qualified via license from Textron or Cherry. Textron or Cherry "breezed." The new function, novel and useful, found immediate acceptance and commercial success. In 1964 Voi Shan entered into a license agreement covering it with Textron, which involved a five percent royalty. In 1959 Olympic and Textron entered into an agreement under which Olympic was licensed and the royalty involved was five percent. The Huck, Voi Shan, and Olympic companies represent a big splash in the lake of blind rivet manufacturers. Just how big this record does not show—there was an uncontradicted statement during argument that those companies are the major ones in the field. Total sales of what Textron claims to be rivets within the Gapp patent by Textron to date amount to approximately $29,000,000—that has got to be a lot of rivets. (The claim language is intentionally careful. There is no question at all that it is not only a claim, but in fact if one looks only to the functional, all of these sales meant sales of rivets that would clamp up first and clinch. More about this under "infringement.")

Voi Shan and Olympic combined have paid Textron royalties under the license agreement amounting to close to one-half million dollars—another approximately $10,000,000.

Next, if this be a secondary, and it is pretty close to a secondary these days—see *Parker Sweeper*—there is the presumption of validity and in that connection, of course, that presumption places before one questioning validity a "heavy burden"—see *Westwood Chemical* in the Sixth Circuit. That burden, of course, includes the burden on obviousness. That burden is somewhat heavier when what is really conceded to be the prior art was considered repetively by the Patent Office. The prior art was Huck (in practice—M.S.). Huck was the joker, and really the swing point in the file wrapper is the result of the tests of the differences between Huck and Gapp—the tension tests. There was nothing at all fraudulent about those tests. The report of the tests to the Patent Office was in fact true.

We, of course, are aware of the smallness, objectively, of the diameter and placement, of the diameter changes between Huck and Gapp. The relative smallness is not particularly important if the attack and resulting function is markedly different.

For these reasons, it is the conclusion of this Court that the Gapp patent is valid.

INFRINGEMENT

Specifically incorporated in these findings is PX-9, 9A and PX-10a through D. The purpose is to direct anyone's attention to the exhibits in this case from which the infringement controversy is the easiest to understand.

Olympic claims that its rivet is not within the claims of the Gapp patent for three reasons.

First, the patent claim is directed to and fixes as the boundary for trespass purposes this: The blind head after the pulling portion is of "substantially uniform diameter

through its length." Olympic's claim is that its Cherry Lock blind head is not of substantially uniform diameter through its length. As a matter of fact, over a very small distance, the Olympic rivet, instead of being of constant diameter, varies some fifteen percent. The exhibits demonstrating this are Defendant's Exhibits 19, 21, 23, 25, and 27. After the Cherry Lock joining portion reaches its maximum diameter, the Cherry Lock diameter reduces for awhile and then expands for a while and finally it expands to a diameter somewhat larger than the largest diameter of the joining portion.

Secondly, the Gapp claim or definition of trespass, dealing with both an assembly and a method patent, states or requires "that the tapered joining portion of the blind head, upon reaching the region of the inside plate, will fully clinch the plates and completely expand the rivet tail against the corner of the hole in the adjacent plate in a single head-forming operation." Olympic claims that the rivet tail is partially formed with its rivet at the time the tapered joining portion first becomes wholly inside the rivet and then, what is more, when the still larger part at the end of its blind head is drawn into the hole, the tail expands further. Another way they say it in this record is this: In Gapp the blind head is upset as far as it is ever going to be upset initially and at one time in Olympic, it is upset in two operations. That is true in fact, but it is not the end of the problem.

Third, the claim of the Gapp patent states or requires, or defines as the boundary this: That after the clinching and complete tail formation "said tapered joining portion and blind head will be wire drawn as said joining portion and said blind head are pulled into and *through* (under-

scoring ours) said tubular rivet for expanding the shank * * * tightly against the sides of the holes in said plates." The underscoring was for the purpose of accenting the dispute. What does "through" mean? The plaintiff Olympic says it means that some part has to go through the rivet which the patent has already defined to include not only the shank but the head. The defendant claims it means simply that you pull it through the shank to the extent necessary to fill the hole. In this Court's view that is this case one way or the other from an infringement point of view.

To dispose of those items seriatim. There is an element of what the plaintiff claims to be file wrapper estoppel in number 1. Clear at the end of the prosecution the patentee, Gapp, zeroed in on this in differing from Huck. See pages 40, et seq., and 71, et seq., of the file wrapper and the insertion of "substantially uniform." Of course, no words can be separated from their context. Five to fifteen percent in a short space may in the abstract approach a substantial change. However, substantial in this patent is in a context of distinguishing from Huck. The Huck diameter is obviously and at the end substantially different. That was needed in Huck—not in Gapp. In the Defendant's Exhibits 19, et seq., which we have referred to, is a graphic and comparative exhibition of the objective differences in the diameter between the three rivets. Bearing in mind the purposes of this diameter to begin with, this Court has no difficulty in concluding as a fact that in this context, the Olympic head is of substantially uniform diameter. The smaller waist measurement in Olympic serves no purpose at all and from a point of view of what is to be accomplished the diameter of Gapp and Olympic are the same.

Nor do we think there is much difficulty on point 2. The important thing, from an inventive or a single, or a copying point of view, is this, to repeat: When you start your wire drawing, you have got to upset the blind head sufficiently to clamp. Or stated otherwise, Gapp taught you to have to do sufficient upsetting aid tail formation at that point in time to come to the clamp stage desired in the industry. Olympic's diameter is such that it does just that. True, it gets more tail at the end, but it serves absolutely no purpose. The tension strength you get from a Cherry Lock or an Olympic [tension strength is required to pull a given set of plates apart after they have been riveted] is the same. What is more, if you take an Olympic-Lok, either with or without the waist, i.e., you reestablish the variation, you get the same tension strength. So, both perform the same function in the same way and the additions do not change anything. Insofar as "2" is concerned, it is an equivalency at best, or at worst, depending on one's point of view.

Number 3 cannot be disposed of that simply. After all, the claim does claim "into and through" and when one speaks of a thing as going through, even though he describes the purpose to be served, it conjures at least in the lay mind some part of that thing going through and out—add to that this: The first more or less formal description of this invention is in Defendant's Exhibit 43.[5] In the drawing, one of four describing the four major steps of this invention, step 3 drawing illustrates the hole filling. As a separate step illustrating the completion, the drawing shows what we have called alternately the curving shoulder or joining tapered portion completely through and out of

[5] The inventor's "res gestae" 1954 description.

and above the top of the head of the tubular rivet. Then add this: In the same writing, describing six advantages of the new rivet the fifth is stated this way: "Inspection of the installed rivet is simple. So long as the shoulder of the stem plug section is visible above the rivet head, it is certain that a full upset head (blind head) has formed tightly against the blind side sheet." Finally, the drawings, as well as the description of how the thing works in the Gapp patent, depict the shoulder, and for that matter a little part of the head *above* the top of the rivet head and speak of just that. It is true, as plaintiff claims, that the function is served when you put the collar in or close to the rivet head. Both the Cherry Lock rivet and the Olympic rivet prove just that in practice. Or as a matter of fact not only does Olympic in practice not result in the collar going through the rivet head, but that is true of the Cherry Lock rivet. (Once again, it probably should be said that since the lock part is not important in this case, we are not even talking about that variation of Gapp which is called High Clinch.)

However that may be, a patent is a monopoly. In summarizing, *Koykka* put it this way: "One may walk right up to a claim without infringing it." See 42 F.R.D. at page 48.

We have attempted to apply the law as stated in these cases to this factual situation. *Graphicana Corp.* v. *Baia Co.*, ... F.2d ... (6th Cir. 1973); *Aluminum* v. *Thompson, Products*, 122 F.2d 796 (6th Cir. 1941).

While this could not be described as a crowded art, the changes dealt with in the Gapp patent from an objective point of view were concededly small. That does not bother this Court insofar as the validity question is concerned. But from an infringement point of view, as the Sixth Circuit said in the *Aluminum* case, "The inventors have

precisely limited their invention. * * * We are precluded from interpreting as within the monopoly of a patent that which the inventors meticulously excluded."

"Through" used in the meticulousness of this claim, read in the light of the specifications and the drawings and the history of the invention, we cannot sweep under the rug either per se or equivalently. It is therefore the conclusion of this Court on the infringement issue that the Olympic Lock does not infringe the Gapp patent.

TIMOTHY HOGAN
United States District Judge

Appendix A

IN THE

UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF OHIO
WESTERN DIVISION

Civil Action No. 7827

OLYMPIC FASTENING SYSTEMS, INC.,

Plaintiff,

v.

TEXTRON, INC.,

Defendant.

Final Judgment

Filed September 17, 1973

This Cause having been tried and decided by this Court's Memorandum Decision of August 10, 1973 and Order on Plaintiff's and Defendant's Proposed Findings and Conclusions of August 14, 1973, now in accordance with said Decision and Order, the parties have settled on and desire the Court to enter this Final Judgment.

Now, THEREFORE, it is Ordered, Adjudged and Decreed:

1. That the Court has jurisdiction of the subject matter hereof and of the parties hereto.

2. That United States Patent No. 2,931,532 is valid.

3. That Plaintiff's "OLYMPIC-LOK" pull-type blind fasteners do not infringe any of the claims of said Patent No. 2,931,532.

4. That there shall be no award of costs or attorney fees and each party shall bear its own costs.

TIMOTHY HOGAN
United States District Judge

APPENDIX B

No. 74-1203

UNITED STATES COURT OF APPEALS
FOR THE SIXTH CIRCUIT

OLYMPIC FASTENING SYSTEMS, INC.,
Plaintiff-Appellee,

v.

TEXTRON INC.,
Defendant-Appellant.

Appeal from the United States District Court for the Southern District of Ohio.

Decided and filed October 16, 1974.

Before: PHILLIPS, Chief Judge; EDWARDS and LIVELY, Circuit Judges.

LIVELY, Circuit Judge. This patent case is concerned with the art of riveting, especially as it is practiced in the aircraft industry. In the manufacture of airplanes it is necessary to join sheets of metal together by riveting under circumstances where the riveter cannot see or reach behind or inside the sheets being joined. For this reason "blind" fasteners were developed in which a tubular rivet consisting of a fixed head and a hollow sleeve has inserted within its core a stem which is enlarged or serrated on its exposed end so that a pulling-type rivet gun can activate it. The lower end of the stem, which extends beyond the inner sheet of metal, contains a tapered joining portion and a "blind head" which has a larger diameter than the stem or the

sleeve of the tubular rivet. The blind head of the stem "upsets" or expands the lower end of the sleeve into a "tail" when the pulling force of the rivet gun forces it upward into the sleeve. This presses the inner sheet upward, closing any space that might have existed between it and the outer sheet. During this operation the exposed head of the rivet is held tightly against the outer sheet by the rivet gun. Thus, the sheets of metal are clamped or "clinched" together. The Cherry patent No. 2,183,543, not in issue here, was a pioneer in blind riveting, but the joinder it achieved was "non-structural" because the connecting sleeve between the riveted parts remained hollow.

The Huck patent No. 2,501,567 achieved a structural joinder by extruding and deforming the stem—a process known as "wiredrawing"—to fill the hollow sleeve of the tubular rivet. This was accomplished by pulling an enlarged section of the stem through the sleeve and expanding the sleeve by forcing its sides tightly against the holes in the plates being joined and filling the sleeve with the extruded stem. The "blind-head upset" occurred when a second, larger section of the stem further enlarged the sleeve on the blind side of the metal sheets to form the tail. Since upset took place after the hole filling was completed rather than before it was begun, satisfactory clamping or clinching of the riveted sheets was not achieved. The Huck patent was concerned with hole filling rather than clamping and did not specify the dimensions of the various parts.

So far as this record discloses the first blind rivet-type fastener that successfully dealt with both the problems of clamping and hole filling was Gapp patent No. 2,931,532, issued April 5, 1960. It was the first "self-plugging" fastener which also achieved satisfactory clinching. The application for this patent stated that it related to a "blind type

rivet wherein the stem of multipiece rivet is pulled to first expand the tubular rivet shank and clinch the sheets together and thereafter wiredraw to expand the rivet to fill the hole in the sheets . . . ." By increasing the strength of wiredrawing and enlarging the dimensions of the stem, tapered shoulder and blind head of the fastener, Gapp perfected a device which clamped the sheets securely together without leaving a nonstructural hollow tube. This breakthrough was discovered by accident, but met a long-felt need in the aircraft and rivet industries. The sequence of events in the riveting process is important. In the Gapp patent, with the first movement of the joining portion upward the bottom of the tubular rivet is upset, or forced outward to form a tail, pressing the lower plate against the upper, or exposed one. With the clamping complete, pulling is continued and the sleeve is plugged by wiredrawing the blind head.[1]

The Gapp patent is owned by Textron. While the application was being prosecuted in the Patent Office, Textron's predecessor granted a non-exclusive license to Olympic. Thereafter the plaintiff began to manufacture and distribute Olympic-Lok rivets which are also blind-head, hole-filling fasteners for use in the aircraft industry. Olympic has paid Textron royalties on other fasteners which it admittedly makes under the licensing agreement, but has never paid royalties on Olympic-Lok rivets. The Olympic-Lok rivet is manufactured and sold under patent No. 3,285,121, issued on November 15, 1966 to an Olympic employee, George Siebol, and subsequently assigned by him to Olympic.

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[1] See Appendix I.
Figure 1, A through D shows the Gapp invention at various stages in the fastening process. The labels were not on the illustration when it was filed with the patent application, but were added by a trial witness.

Appendix B

This suit was brought as a declaratory judgment action by the licensee seeking a declaration that the Gapp patent is invalid and, if valid, that it is not infringed by the Olympic-Lok rivet. The decision of the district court upholding the validity of the Gapp patent has not been appealed. Thus the only questions before this court relate to infringement. Olympic presented three arguments in support of the contention that its fastener is not within the claims of the Gapp patent. The district court made findings on each of these propositions, rejecting two of the plaintiff's arguments and adopting one. The ultimate conclusion of non-infringement made it unnecessary for the court to deal with Textron's counter-claim in which it sought an accounting for royalties on the Olympic-Lok rivet, costs and attorney fees.

The three findings of the district court on the question of infringement may be summarized as follows:

(1) An important distinction between the Gapp patent and the earlier Huck invention was that the size of the blind head of the Gapp fastener beyond the pulling part is of "substantially uniform diameter through its length." The Huck device had a large protrusion at the bottom of the stem. Although the blind head of the Olympic-Lok rivet varies from five to fifteen percent in diameter over a very small distance, the court held that in the context of the Gapp claim, "the Olympic head is of substantially uniform diameter. The smaller waist measurement in Olympic serves no purpose at all and from a point of view of what is to be accomplished the diameter of Gapp and Olympic are the same."

(2) In Gapp the blind head is upset completely in a single step while in Olympic the upset occurs in two operations. The district court found that the single-step upset

of the Gapp device provided the clamping or clinching required by the aircraft industry, and that the second stage upset of the Olympic fastener merely formed a larger tail which "serves absolutely no purpose."

(3) The district court found the Gapp requirement that the "*joining portion and said blind head are pulled into and through said tubular rivet . . .*" (Claim 1, emphasis added) means these components must be pulled "through and out." The parties have referred to the questions determined by these findings as "sub-issues" under the general issue of infringement. The court's finding on the third sub-issue resulted in a holding of no infringement, and we will deal with it first.

Claim 1 of the Gapp patent,[2] which is reproduced in full in the margin, contains the language which the district court found to be decisive. The evidence disclosed that in the Olympic-Lok rivet the stem contains a notch or groove

[2] 1. A rivet assembly for tightly securing plates together under stress of use, said rivet assembly including a tubular rivet snugly fitting into aligned holes in the plates to be riveted, said tubular rivet having a shank and a head on one end of the shank and a tail on the other end of said shank, said shank and said tail being of substantially the same outer diameter throughout their entire combined length and of smaller diameter than said head, a stem extending through said tubular rivet tail, shank and head, said stem consisting of a pulling portion extending beyond said head and being readily slidable through said tubular rivet, and an elongated and radially enlarged blind head extending beyond the blind end of said pulling portion, said blind head being of substantially uniform diameter throughout its length, and a joining portion between said pulling portion and said blind head, said joining portion tapering outwardly from said pulling portion to said enlarged blind head and being adjacent the tail of said tubular rivet, the angle of said taper and said substantially uniform blind head diameter and the wire-drawability of said tapered portion and said substantially uniform blind head being such that with the rivet snugly fitting into the aligned holes the tapered joining portion, upon reaching the region of the adjacent plate, will fully clinch the plates and completely expand the rivet tail against the corners of the hole in the adjacent plate in a single head-forming operation to the finished size of said clinching tail, and after said clinching and complete tail formation said tapered joining portion and blind head will be wire-drawn as said joining portion and said blind head are pulled into and through said tubular rivet for expanding the shank of the latter tightly against the sides of said holes in said plates.

in a position which is even with the top of the rivet head when the pulling action of the rivet gun is completed. The stem can be broken off flush with the exposed head without the necessity of trimming. The court noted that in its formal description of the Gapp invention, the defendant's Exhibit No. 43 shows a separate step to demonstrate the completion, after illustrating the hole filling. At this completion stage, both in the description and illustration, a portion of the shoulder and blind head are completely through and above the top of the exposed rivet head. In the Gapp specification, after describing the upset of the blind head and the clinching of the sheets together, it is stated that "the enlarged head of the stem is further wiredrawn until the connecting part or the reduced portion of the enlarged head in pulled through the rivet head substantially in the position shown in position 'D' in Fig. 1." Position D [3] shows the joining portion clearly beyond the end of the rivet head. The specification also refers to a step in which "the projecting end of the stem is trimmed off substantially flush with the rivet head." The district court determined that "through" as used in the concluding sentence of Claim 1 of the Gapp patent has the meaning of "through and out of." This finding was based upon language of the specification and the Claim itself in addition to such external evidence as a dictionary definition of "through" and a memorandum from the inventor to his supervisor written shortly after the invention was perfected.

The Supreme Court, in dealing with validity of a patent, has stated the fundamental rule that patent claims are to be interpeted "in the light of the specifications and both are to be read with a view to ascertaining the invention." *United States* v. *Adams*, 383 U.S. 39, 49 (1966). In *West-*

[3] See Figure 1-D, Appendix I.

inghouse Electric & Manufacturing Co. v. *Quackenbush*, 53 F.2d 632, 634 (6th Cir. 1932), this rule of construction was applied to patent infringement cases as follows:

> The claims must be read and construed in the light of the specification, and so liberally interpreted as to uphold and not destroy the right of the inventor in the substance of his invention.

Our examination of the specification of the Gapp patent convinces us that the word "through" was not used in the restricted sense of "through and out of." While it is clear that the pulling stem is drawn completely through and out of the hollow sleeve or tubular rivet, the connecting portion and wiredrawn blind head, referred to collectively by one witness as "the upsetting portion of the stem," are only required to be drawn into and through the hollow sleeve to a predetermined distance, which may be either flush with the exposed rivet head or beyond it. Reproduced here, with emphasis added, in Column 1, lines 45-71 of the specification of the Gapp patent as granted:

> Particular features of this invention include *pulling a stem through a tubular rivet* so as *to pull an elongated blind head into the tubular rivet* in the work so that the blind head first expands the tubular rivet wall against the blind side of the work, draws the sheets or work together, and then expands the tubular rivet against the hole in the sheet or work and substantially simultaneously the said blind head is reduced in diameter, or wire drawn, so as to fill tightly the enlarged and expanded passage in the tubular rivet, and then *the wire drawing of the stem is continued by pulling the stem until the blind head on the stem is pulled into the rivet to the predetermined extent.*

> In other words, in a rivet assembly consisting of a tubular rivet with a head on one end and a stem extended through the rivet, said stem having on its blind end a so-called blind head, *the stem is pulled through* the tubular rivet so as to first expand the tail of the tubular rivet against the corner of the hole or work and draw the work together, *then to reduce the diameter of the blind head by wiredrawing it so that it can be pulled into* the rivet so as to expand the side walls of the rivet against the hole, and *then to further wire draw the blind head* of the rivet by continued pull until the entire length of the tubular rivet is expanded against the hole and the drawn or reduced blind head tightly fills the interior of the tubular rivet; *then stopping the pull when the wiredrawn portion of the head reaches or passes through the rivet head.*

It can be seen that the words "into" and "through" are used variously and that the distance which the joining portion and blind head are pulled is described by other words such as "predetermined extent" and "reaches or passes through the head."

The specification also refers to accompanying drawings which illustrate various embodiments of the invention. In addition to Figure 1-D which shows an embodiment in which part of the connecting portion and blind head have been pulled beyond the exposed head and must be trimmed off, modifications which are claimed as protected embodiments of the invention are shown in other figures. With respect to Figure 4,[4] the specification states:

> The modified form of the stem shown in Fig. 4 is preferably used in connection with the type of stem which has a pulling head 9 and is provided with a weakened portion or groove 32 which determines the

[4] See Figure 4, Appendix I.

> distance at which the pulling action should cease. As the stem is pulled through the work it is pulled until the groove 32 is approximately flush with the top of the head 3 of the tubular rivet 2. Then the stem could be broken off by merely bending the portion of the stem which projects beyond the groove 32 and thereby the necessity for special trimming tools may be eliminated.

Olympic contends that a study of the file wrapper history of the Gapp patent discloses that Figure 4 relates to an abandoned claim. As is often the case, many claims of the original Gapp application were found not to warrant inclusion in the patent as granted. Oympic argues that Gapp's original Claim 1 was broad enough to include a stem with a notch to permit a break flush with the exposed rivet head (Figure 4), but that when that Claim was abandoned this embodiment was abandoned with it. However, the original Claim 1 was a method claim, rather than a claim on the fastener itself. This and amended Claims 1 and 2 were rejected by the Patent Office on the ground that the steps described therein were fully described in the prior Huck patent. Later the Patent Office rejected Gapp Claim 12 on the ground that the difference between Gapp and Huck was one of design of the stem and blind head rather than one of method. The file wrapper discloses disagreement over whether the method claims were disclosed by the earlier Huck patent, but nothing about whether the wiredrawn blind head was pulled beyond the exposed rivet head or only flush with it.

Gapp also abandoned method Claim 18 which described the notched stem illustrated in Figure 4 and stated that the wiredrawing of the blind head could be stopped when the joining portion reached the "region" of the exposed rivet head. The reason for abandonment was the patent

examiner's objection that it was "considered to recite no more than the obvious and expected use of the rivet of claim 16." The Claim 16 referred to by the examiner is the same as the final Claim 1 of the patent. Thus a separate claim embodying Figure 4 was treated as unnecessary because it was merely descriptive of the use to be made of the patent device. Under these circumstances the cancellation of Claim 18 should not be considered an abandonment of the embodiment of the invention which it had described.

We have examined the cases cited by Olympic on the issue of abandonment and recognize the principles which they enunciate. However, they have no application in view of our determination that the embodiment of the Gapp invention containing a notched stem to facilitate breaking flush with the top of the exposed rivet head was never abandoned. In *Nickerson* v. *Bearfoot Sole Co., Inc.* 311 F.2d 858, 876 (6th Cir.), *cert. denied*, 375 U.S. 815 (1963), the court held that a patentee may not include matters which the file wrapper shows to have been eliminated from the patent. Similarly, the Supreme Court has held that abandoned claims may not be revived by being read into the language of allowed claims. *Schriber-Schroth Co.* v. *Cleveland Trust Co.*, 311 U.S. 211, 218 (1940). Here the flush-breaking stem was included in what became Claim 1, as an obvious use of the device. It was not eliminated or abandoned.

In *Exhibit Supply Co.* v. *Ace Patents Corp.*, 315 U.S. 126 (1942), the original patent application contained six claims, all of which were rejected by the examiner. Amendments were then submitted, four of which were eventually allowed. The Court interpeted the claim language "embedded in" and held that two accused devices embedded in

a table but not wholly contained within it infringed on the patent. However, the Court also applied the doctrine of "file wrapper estoppel" to find no infringement by other accused devices not embedded in a table since the patentee had abandond the words "carried by" in favor of "embedded in." We find no basis in the file wrapper history of this case for allowing the defense of file wrapper estoppel even if otherwise applicable. Gapp did not adopt the word "through" as a substitute for less restrictive language. Furthermore, the defense of file wrapper estoppel only applies where infringement is shown under the doctrine of equivalents. *Kolene Corp.* v. *Motor City Metal Treating, Inc.*, 440 F.2d 77, 82 (6th Cir.), *cert. denied*, 404 U.S. 886 (1971). The dist. t court made no finding on equivalency, and we do not deal with that question. See *Graver Manufacturing Co.* v. *Linde Air Products Co.*, 339 U.S. 605, 609 (1950). This sub-issue deals with interpretation of the Claim and a charge of literal infringement. Thus we have considered the file wrapper history as an aid to interpretation of the Claim, and specifically to determine whether there has been an attempt to revive abandoned claims.

Olympic also points to an admission by the inventor Gapp that the "joining portion" should be visible above the exposed head to facilitate inspection. This was described as a bonus of the invention. Facility of inspection from the visible side was listed in the specification as one of the accomplishments of the Gapp device. However, another advantage cited by Gapp in a memorandum to his supervisor Ketchum was that the stem could be notched and the notched portion pulled flush or just below the exposed head. The fact to be determined by inspection is whether the sleeve is completely filled and expanded tightly against the

holes in the plates at the end of the operation. This may be observed as readily by examining a completed operation where the filling portion is sheared off flush with the top of the exposed rivet head as where a portion of the filling material extends beyond the head and requires a separate step to trim it flush. Our consideration of the cited evidence leads to the conclusion that Mr. Gapp had both versions of the fastener in mind at the time of the invention. The inventor testified that ease of inspection was "no part of the surprise of the invention."

Turning to the Claim itself, we note that the concluding language of Claim 1, which was relied on by the district court and Olympic, refers to pulling the joining portion and blind head into and through "said tubular rivet." Nowhere does the Claim say that the joining portion or blind head is pulled beyond the exposed head. In both the Gapp device and the Olympic-Lok rivet the joining portion and wire-drawn blind head are pulled through the full length of the tubular rivet. Furthermore, in the same sentence of the Claim the purpose of pulling the joining portion and blind head through the tubular rivet or sleeve is stated to be "for expanding the shank of the latter tightly against the sides of said holes in said plates." In other words, these parts are pulled through the sleeve in order to fill it and force it tightly against the holes in the plates which are being joined. This "hole-filling" function is complete when the wiredrawn parts are pulled to the top of the exposed head because the entire hollow sleeve is then filled and expanded against the holes in the plates. Nothing would be added to this function of the mechanism by continuing to pull until the joining portion and part of the blind head extend beyond the exposed head.

We do not find in the use of the words "into and through" in Claim 1 a precise limitation to fasteners in which the wire-drawn elements are pulled beyond the exposed rivet head or a meticulous exclusion of fasteners whose stems are notched to achieve a break flush with the top of the head. These words do not relate to an inventive step or a substantial function of the invention. *Cf. United Shoe Machinery* v. *O'Donnell*, 84 F.2d 383, 386 (6th Cir. 1936). This present case differs sharply from *Aluminum Co.* v. *Thompson Products, Inc.*, 122 F.2d 796 (6th Cir. 1941), and *Dillon Pully Co.* v. *McEachron*, 69 F.2d 144 (6th Cir. 1934). In both of those cases there was clearly an express limitation in the claim of invention and the accused device departed from the claim in the very area of such limitation. By precisely limiting their claims the inventors were held to have meticulously excluded devices which differed in the particulars so limited. Nor do we believe that the widely accepted principles of *Graphicana Corp.* v. *Baia Corp.*, 472 F.2d 1202 (6th Cir. 1973), cited by Olympic, have application to the facts of this case. There a finding of non-infringement was based on determination that omission from or change in the accused device of an element in a claim of the patent resulted in a change in function. Specifically, the court found that the accused device contained no element which performed the function claimed in the patent for a "mar-proof base."

The decision on this sub-issue is controlled by this court's holding in *Maxon* v. *Maxon Construction Co.*, 395 F.2d 330, 335 (1968), that if his claim is broad enough an inventor may claim infringement "if another uses the principle and appropriates the substance of his invention." There the court held that the one function claimed for gates on the

body of a dump truck was performed alike by gates on the patent and the accused, though the gates were placed at different locations on the two. Here, the function of filling the sleeve and expanding it tightly against the holes in the clamped plates is performed in the same way in both Gapp and Olympic fasteners. With respect to the meaning of the claim language that the joining portion and blind head are pulled "into and through" the tubular rivet, we find no limitation which prevents Textron from claiming infringement by the Olympic-Lok rivet. The witness Ketchum testified without contradiction that the extent to which the blind head is pulled into the sleeve is not a part of the inventive concept of the Gapp patent. In the same vein, the inventor, Howard Gapp, testified that it is of no importance how far the blind head is pulled so long as the devices clamp-up first, followed by hole filling. He also testified that hole filling is sufficiently complete when the joining portion pulls up to the head of the rivet. There was no evidence that any function was served by pulling the blind head out of and beyond the exposed head of the tubular rivet. The Olympic-Lok fastener performs the same function as the Gapp invention, precisely in the manner of the embodiment described in the specification and illustrated in Figure 4. To the extent that it differs from the embodiment shown in Figure 1, such difference is a non-functional variation in a device which otherwise reads on the claims of Gapp. On this sub-issue the findings of the district court are clearly erroneous.

Though Olympic did not file a cross appeal, both parties have briefed the other two sub-issues upon which the district court made findings of fact in determining the isue of infringement. By questions from the bench during oral argument, the court indicated some doubt as to whether

these matters were properly preserved for review. Our holding that the district court's finding on sub-issue 3 was clearly erroneous requires that we explore the necessity of a cross appeal with respect to sub-issues 1 and 2. The Practitioners' Handbook of the Sixth Circuit (1973 Rev.) states on page 31:

> **Cross Appeals**
>
> The appellee may, without having to file a cross appeal, defend a judgment on any ground consistent with the record, even if rejected in the lower court. But he cannot attack the judgment, either to enlarge his own rights thereunder or to lessen the rights of his adversary, unless he files a cross appeal. A cross appeal is necessary even if the appellee merely seeks to correct an error or to supplement the decree with respect to a matter not dealt with below.

This appears to be a paraphrase of the rule promulgated in *United States* v. *American Railway Express Co.*, 265 U.S. 425 (1924). In that case the appellee urged on direct appeal to the Supreme Court two reasons (which it had also urged in the lower court) for affirming the district court judgment in addition to the reason relied on by the trial court. One appellant argued that the Court should not consider these additional contentions since there has been no cross appeal. Wri'ing for the Supreme Court, Mr. Justice Brandeis characterized this argument as "unsound" and said:

> It is true that a party who does not appeal from a final decree of the trial court cannot be heard in opposition thereto when the case is brought here by the appeal of the adverse party. In other words, the appellee may not attack the decree with a view either to enlarging his own rights thereunder or of lessening the rights of his adversary, whether what he seeks is to correct an

> error or to supplement the decree with respect to a matter not dealt with below. But it is likewise settled that the appellee may, without taking a cross-appeal, urge in support of a decree any matter appearing in the record, although his argument may involve an attack upon the reasoning of the lower court or an insistence upon matter overlooked or ignored by it. By the claims now in question, the American does not attack, in any respect, the decree entered below. It merely asserts additional grounds why the decree should be affirmed. These grounds will be examined. 265 U.S. at 435-436.

The *Railway Express* rule was applied by the Court in *Morley Construction Co.* v. *Maryland Casualty Co.*, 300 U.S. 185 (1937), where it was held that failure to file a cross appeal did foreclose consideration of contentions urged by an appellee. In that case, however, acceptance of the appellee's argument by the Court of Appeals had resulted in modification of the district court's decree. When an appellee seeks to have findings of a trial court revised, a cross appeal is required if such revision "carries with it as an incident a revision of the judgment." *Id.* at 191. In *Jaffke* v. *Dunham*, 352 U.S. 280 (1957), the Supreme Court held that a succesful party in the district court may sustain its judgment on any ground that finds support in the record. It was held to be error for the Court of Appeals to refuse, on the ground that no cross appeal had been filed, to consider the appellee's claim that the district court wrongfully ordered an affidavit stricken.

This court has applied the stated rule in a number of cases. In *Reynolds Spring Co.* v. *L. A. Young Industries, Inc.*, 101 F.2d 257 (6th Cir. 1939), an appellee in a patent infringement suit was denied the right to argue that its damages should have been greater than the district court

awarded. The court reasoned that this was an attack on the judgment of the trial court for the purpose of enlarging the appellee's rights thereunder. A similar result was reached in *Third National Bank in Nashville* v. *United States*, 454 F.2d 689 (6th Cir. 1972), where an argument made by the appellant was viewed as leading to a result more favorable to the appellee than the district court judgment. Another rule recognized by this court is that a judgment will be affirmed, if correct for any reason, even though the reason or basis of the district court's decisions may be erroneous. *Paine & Williams Co.* v. *Baldwin Rubber Co.*, 113 F.2d 840, 844 (6th Cir. 1940). The same principle has been applied to permit arguments by appellees who have not cross appealed. E. g., *Cook* v. *Hirschberg*, 258 F.2d 56 (2d Cir. 1958); *Standard Accident Insurance Co.* v. *Roberts*, 132 F.2d 794 (8th Cir. 1942).

Having received the full relief available to it on the issue of infringement because of the district court's holding on sub-issue 3, Olympic had no occasion to file an appeal. The appeal by Textron put the correctness of the district court judgment in issue, and Olympic was not required to file a cross appeal in order to seek affirmance of that judgment on the basis of arguments expressly rejected by the district court. *Swarb* v. *Lennox*, 405 U.S. 91, 202 (1972) (concurring opinion of Mr. Justice White).

In contrast to sub-issue 3, the record with respect to the other two sub-issues reveals a distinct conflict in the evidence. The first such issue—whether the Olympic-Lok rivet has a blind head of "substantially uniform diameter"—was the subject of testimony by expert witnesses for each of the parties. As originally filed, the Gapp Claim did not prescribe a uniform diameter throughout the length of the blind head. The Patent Office objected that there was noth-

ing to distinguish the makeup of the lower stem from that of prior art devices which achieved clamping with a plug or "external proturberance" which upset the tail of the rivet after the stem had been pulled completely through the sleeve, leaving a hollow tube. To distinguish the functions its blind head performs—that of clamping first and then filling—from previous patent devices, the Gapp Claim was amended by inserting the words referred to.

The change in diameter of the Olympic-Lok fastener from one end of the blind head to the other is minute. It appears from examining actual rivets and illustrations filed as exhibits that there is a second small flare at the end of the Olympic-Lok blind head. A witness for Textron testified that illustrations [5] which he filed as exhibits were accurate enlargements of the actual Gapp and Olympic-Lok fasteners and an example of the prior art and that when they are superimposed and compared with the prior art, Gapp and Olympic are both of substantially uniform diameter. Since the Gapp claim requires that the blind head be "substantially" rather than absolutely uniform throughout its length, unless the second flare on the Olympic device performs some function not performed by the Gapp fastener, this feature alone will not avoid infringement. The expert witness, Ketchum, testifying for the defendant, stated that the blind head on the Olympic-Lok rivet is structurally similar to that of the Gapp device and that from a functional standpoint the two devices perform in the same manner. Furthermore, testifying as one skilled in the art, this witness expressed the opinion that the blind head of the Olympic-Lok fastener is of substantially uniform diameter. This testimony is substantial evidence in support of the district court's findings and conclusions on

[5] See Appendix II for one of the illustrations.

this issue. Although interpretation of the claim language of a patent involves legal rules of construction, the question of whether an accused device is within the language of a claim is treated as a question of fact to which the "clearly erroneous" rule (Rule 52(a), Fed. R. Civ. P.) applies. *Ballantyne Instruments & Electronics, Inc.* v. *Wagner*, 386 F.2d 789, 790 (6th Cir. 1967), *cert. denied*, 390 U.S. 1026 (1968); *Maytag Co.* v. *Murray Corp. of America*, 318 F.2d 79, 83 (6th Cir. 1963). In view of the purpose and function of the blind head in both Gapp and Olympic devices and the reason for amending the claim to add the "substantially uniform" requirement, the finding of the district court is not clearly erroneous as contended by Olympic.

The final question to be decided is whether the Olympic-Lok rivet "will fully clinch the plates and completely expand the rivet tail against the corners of the hole . . . in a single head-forming operation to the finished size of said clinching tail," thus infringing upon the quoted language of the Gapp patent. Olympic contends that the district court was clearly erroneous in finding that the Olympic device at minimum infringes on the Gapp patent under the doctrine of equivalents. The district court recognized that the tail of the Olympic rivet is not completely formed until the additional flared portion causes a second expansion, but concluded that this expansion "serves absolutely no purpose." The results of tests run by each of the parties are in the record. Gapp's tests showed that the increased tail expansion on the Olympic-Lok fastener did not add to the tensile strength (the force required to pull two riveted work pieces apart). The tests conducted by Olympic showed the opposite, and each party has assailed the validity of the tests relied upon by the other.

Appendix B

Although the expert witness for Olympic testified that the second "free air expansion" which takes place in operation of the Olympic fastener increases the size of the tail and adds to the strength of the joinder, he admitted on cross-examination that effective clinching does not take place unless it occurs before the hole filling begins. It was testified by Textron's expert that in operation the Olympic-Lok device removes the entire space between the plates at the first pull, or upset, or not at all. This witness stated that nothing was added to the operation by the second expansion since the function of tail forming is to pull the separated plates together and clinch them prior to plugging the sleeve. In other words, the Olympic fastener forms sufficient tail at the first stage to perform the function called for in the Gapp Claim.

The Olympic-Lok device does not appear to be a literal infringement on the language of the Gapp Claim. The district court reasoned that the critical inventive step in the Gapp patent is tail upset to provide clinching. There is substantial evidence in the record to support his conclusion that this function is performed in the same way and at the same stage in the operation of the two devices. Thus he treated the language in the Gapp patent that tail formaion is completed to its finished size at the initial clinching as unimportant. This language does not appear to be an express limitation on the inventive concept. If an express limitation does not "pertain to the inventive step but rather to its mere environment," it does not preclude reliance on the doctrine of equivalents to protect against infringement. *United Shoe Machinery Corp.* v. *O'Donnell Rubber Products Co., supra,* 84 F.2d at 386. Under the doctrine of equivalents "if two devices do the same work in substantially the same way, and accomplish substantially the same

result, they are the same, even though they differ in name, form, or shape." *Graver Manufacturing Co.* v. *Linde Air Products Co., supra,* 339 U.S. at 608. A finding of equivalence is a determination of fact which may not be disturbed unless clearly erroneous. *Id.* at 609-610. The finding of the district court on this sub-issue is not clearly erroneous.

Study of the record and comparison of the two devices in question lead to the conclusion that the Olympic-Lok fastener does infringe on Gapp patent No. 2,931,532. The essential purpose of both devices is to obtain a structural joinder of metal plates to meet the standards of the aircraft industry in situations where there is a "blind" side. This function is performed in both devices by a multipiece fastener which first upsets the tail of a rivet and then plugs the hollow tube of the rivet by wiredrawing the blind head so that the sides of the tube are expanded outwardly, entirely filling the matched up holes in the work pieces. There is no difference in the function performed or in the basic structure of the two devices.

The judgment of the district court is reversed for entry of a finding of infringement and further proceedings on the counterclaim of Textron.

Appendix B

Appendix I

PX9A PX9

April 5, 1960 R. H. GAPP 2,931,532

RIVETS AND METHOD OF RIVETING

Filed April 25, 1955 2 Sheets-Sheet 1

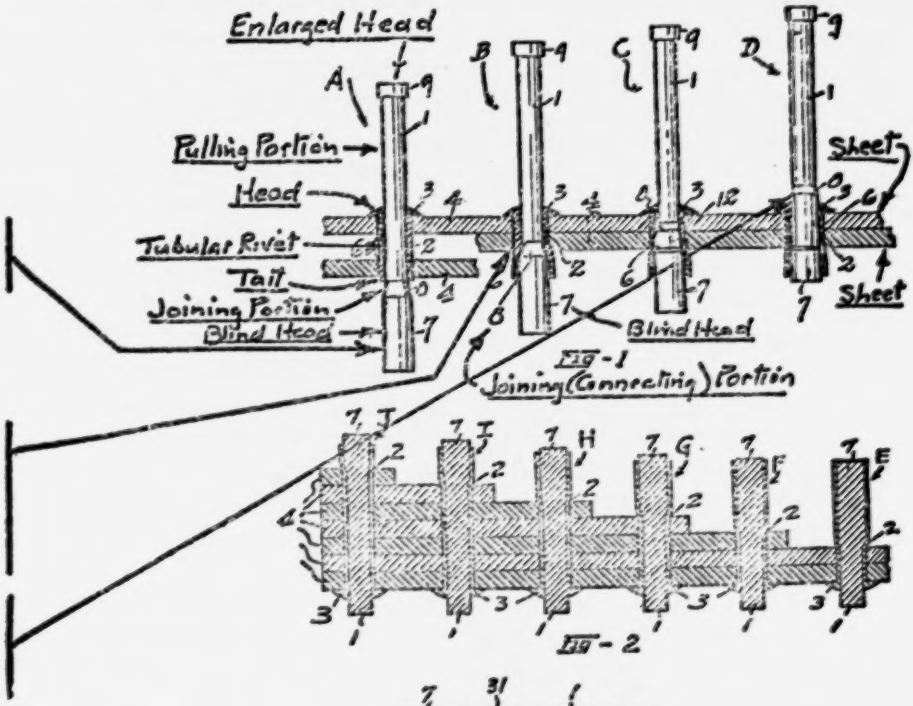


FIG-1

FIG-2

FIG-3

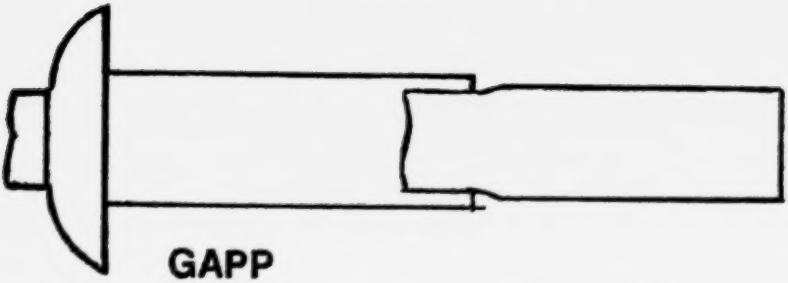
FIG-4

INVENTOR.
EVERARD HOWARD GAPP
BY George Bowles
ATTY

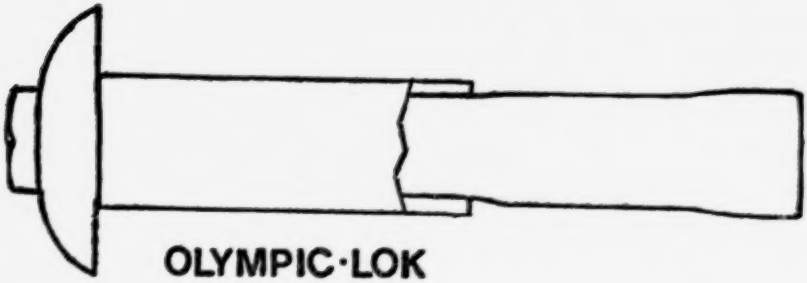
Appendix B

Appendix II

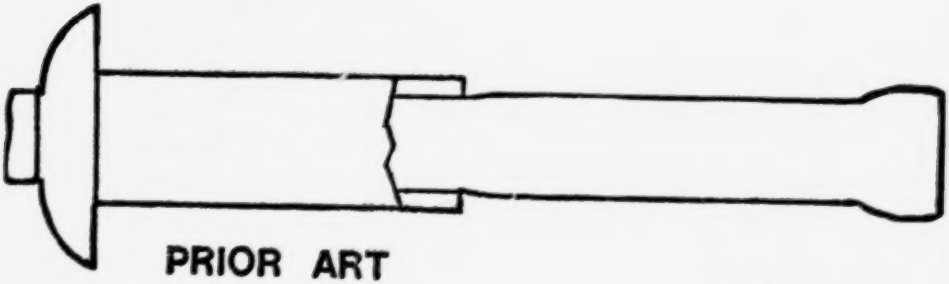
-6-6 RIVET



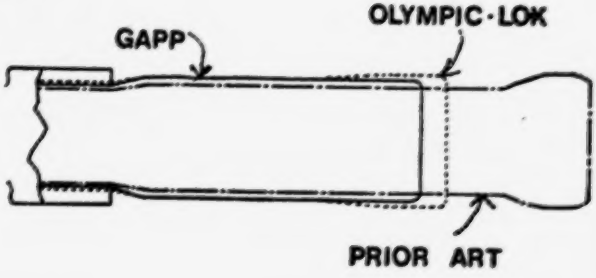
GAPP



OLYMPIC·LOK



PRIOR ART



COMPARISON

Appendix B

IN THE

UNITED STATES COURT OF APPEALS
FOR THE SIXTH CIRCUIT

No. 74-1203

OLYMPIC FASTENING SYSTEMS, INC.,
Plaintiff-Appellee,

v.

TEXTRON, INC.,
Defendant-Appellant.

Order

Filed November 22, 1974

Before: PHILLIPS, Chief Judge; EDWARDS and LIVELY, Circuit Judges.

Upon consideration of the petition for rehearing filed herein by the plaintiff-appellee, the court concludes that the matters covered in the petition were considered at the time of the original submission and hearing in this case. We find no prejudicial error in the decision of the court filed on October 16, 1974.

The petition for rehearing is denied.

ENTERED BY ORDER OF THE COURT

/s/ JOHN P. HELMAN
Clerk

APPENDIX C

THE PATENT STATUTES

35 U.S.C. § 251

§ 251. Reissue of defective patents

Whenever any patent is, through error without any deceptive intention, deemed wholly or partly inoperative or invalid, by reason of a defective specification or drawing, or by reason of the patentee claiming more or less than he had a right to claim in the patent, the Commissioner shall, on the surrender of such patent and the payment of the fee required by law, reissue the patent for the invention disclosed in the original patent, and in accordance with a new and amended application, for the unexpired part of the term of the original patent. No new matter shall be introduced into the application for reissue.

The Commissioner may issue several reissued patents for distinct and separate parts of the thing patented, upon demand of the applicant, and upon payment of the required fee for a reissue for each of such reissued patents.

The provisions of this title relating to applications for patent shall be applicable to applications for reissue of a patent, except that application for reissue may be made and sworn to by the assignee of the entire interest if the application does not seek to enlarge the scope of the claims of the original patent.

No reissued patent shall be granted enlarging the scope of the claims of the original patent unless applied for within two years from the grant of the original patent.

35 U.S.C. § 252

§ 252. Effect of reissue

The surrender of the original patent shall take effect upon the issue of the reissued patent, and every reissued

patent shall have the same effect and operation in law, on the trial of actions for causes thereafter arising, as if the same had been originally granted in such amended form, but in so far as the claims of the original and reissued patents are identical, such surrender shall not affect any action then pending nor abate any cause of action then existing, and the reissued patent, to the extent that its claims are identical with the original patent, shall constitute a continuation thereof and have effect continuously from the date of the original patent.

No reissued patent shall abridge or affect the right of any person or his successors in business who made, purchased or used prior to the grant of a reissue anything patented by the reissued patent, to continue the use of, or to sell to others to be used or sold, the specific thing so made, purchased or used, unless the making, using or selling of such thing infringes a valid claim of the reissued patent which was in the original patent. The court before which such matter is in question may provide for the continued manufacture, use or sale of the thing made, purchased or used as specified, or for the manufacture, use or sale of which substantial preparation was made before the grant of the reissue, and it may also provide for the continued practice of any process patented by the reissue, practiced, or for the practice of which substantial preparation was made, prior to the grant of the reissue, to the extent and under such terms as the court deems equitable for the protection of investments made or business commenced before the grant of the reissue.

35 U.S.C. § 271

§ 271. Infringement of patent

(a) Except as otherwise provided in this title, whoever without authority makes, uses or sells any patented inven-

tion, within the United States during the term of the patent therefor, infringes the patent.

(b) Whoever actively induces infringement of a patent shall be liable as an infringer.

(c) Whoever sells a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be specially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer.

(d) No patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having done one or more of the following: (1) derived revenue from acts which if performed by another without his consent would constitute contributory infringement of the patent; (2) licensed or authorized another to perform acts which if performed without his consent would constitute contributory infringement of the patent; (3) sought to enforce his patent rights against infringement or contributory infringement.

APPENDIX D

Blind Rivets and the Gapp Patent

The Gapp patent involves a so-called "blind" rivet. This is a rivet for fastening together two or more plates or sheets of material which are accessible from only one side, as opposed to the more conventional situation in which both sides of the plates are accessible. The plates will have aligned holes in them to receive the rivet. The blind rivet comprises a hollow sleeve with an enlarged head on one end thereof, with a stem or pin extending through the head and sleeve, the portion of the stem (called the blind head) which projects from the sleeve at the blind end thereof, i.e. the end thereof remote from the head, being enlarged. The sleeve is inserted into the holes so that the enlarged head rests against the accessible side of the outer plate and the sleeve project beyond the inaccessible or blind side of the other plate. Then, while the enlarged head is held tightly against the accessible plate, the stem is pulled up within the sleeve towards the accessible side and the blind head of the stem expands the projecting portion of the sleeve to form a tail, or second head, larger than the diameter of the hole on the inaccessible or blind side to hold the plates together.

Reference is made to A. 43a for illustrations of blind rivets and more specifically, C.A. App. 338a Fig. 1 illustrating the installation of the Gapp rivet and C.A. App. 384a-388a illustrating the installation of the Olympic-Lok rivet.

As blind rivets evolved changes were made to improve them. It is desirable for the blind rivet to clamp the plates tightly together while being set so that separate clamping means are not required to hold the plates together while the rivet is being set. It is also desirable to expand the sleeve within the holes in the plates tightly against the

sides of the holes to form a secure joint. Various means had been devised for accomplishing these purposes, including enlarged stems which would clinch the sheets together, and stems which would "wiredraw" within the sleeve adjacent the holes in the plates to expand the sleeve tightly against the sides of the holes. The problem is that if you expand the sleeve first, friction prevents subsequent pulling together of the plates. The rivet of the Gapp patent is stated to perform both functions, and, although neither function was by itself new at the time the Gapp rivet was invented, invention was found in the combination recited in claim 1.

Gapp's solution was to constitute and configure the blind head of the stem so that with the first movement of the stem the tail is upset or forced outwardly to form the completed tail or second head and clamp the plates together before expansion of the sleeve within the holes of the plates, and then by continued pulling to wiredraw or extrude the blind portion of the stem into the sleeve adjacent to the holes, thus forcing the sleeve radially outwardly tightly against the holes.

APPENDIX E

Summary of Prosecution of the Gapp Patent and Findings by the Courts Below

General

As shown by Olympic's (Plaintiff's) Trial Exhibit No. 3[1] (Pl. Ex. 3, R. 70, 172), there was a prolonged effort to convince the Patent Office of patentable invention. In fact the claims of the issued patent bear little resemblance to the claims originally filed. The application was filed April 25, 1955. Without going into lengthy detail a total of seven Office Actions going to the merits of the claims were issued by the Examiner from the date of filing to July 29, 1959 and seven amendments and responses thereto were filed by Gapp's attorney. He had interviews with the Examiner following the third Office Action issued January 15, 1958. The next Office Action issued December 4, 1958 was a final rejection. After the claims were again amended and a response filed another Office Action again rejecting all claims was issued April 9, 1959. There were then several interviews between Gapp's attorney and the Examiner, on May 29, 1959 Gapp's attorney filed a response adding claims 16 (which became claim 1 of the patent as issued) through 19, and on June 4, 1959 he filed a notice of appeal to the Patent Office Board of Appeals. Another Office Action rejecting all claims was issued June 24, 1959 which was followed by a further response and amendments filed July 21, 1959. Still another Office Action was issued July 29 and further amendments and remarks were filed July 30, 1959. Finally after some minor grammatical changes in the claims the application was allowed and the patent issued April 5, 1960.

[1] This exhibit is the file wrapper of the Gapp patent and consists of more than 100 pages, 91 of which were numbered for reference during the trial. Only selected pages thereof were reproduced in the Appendix filed in the Court of Appeals. Where possible this exhibit will be referenced to the Court of Appeals Appendix as well as the pages of the exhibit itself.

Appendix E

Sub-Issue 1

Claim 16, which became issued claim 1, was added by amendment filed May 29, 1959 (C.A. App. 353a-354a, Pl. Ex. 3 pp. 50-51) *after final rejection and several interviews with the Examiner.* In the argument accompanying submission of this claim it was stated (Pl. Ex. 3 p. 56):

> ". . . claim 16 sets forth the elements of applicant's rivet as having only one head, which is elongated enlarged portion and which together with the tapered joining portion is such that upon reading the region of the plate adjacent the tail *fully* clinches the plates together and forms the *complete* tulip in a single operation, *prior* to the wiredrawing of the elongated enlarged head into the tubular rivet. . . ." (Emphasis in original)

And further (Pl. Ex. 3 p. 57)

> "Any alteration of Huck (2) by cutting off the head 37 would be inconsistant with the teachings of Huck (2) and would altogether modify Huck (2) into a totally different rivet from that disclosed and taught by Huck (2)." [2]

Thereafter the Examiner in the Office Action of June 24, 1959 (C.A. App. 357a-358a, Pl. Ex. 3 pp. 69-70) stated that claim 16 was anticipated by Huck (2) in view of Chobert [3] and also by Huck (2) in view of Mullgardt.[4] In this connection both Chobert and Mullgardt disclosed expanding the blind end of the tubular rivet and clinching the sheets by such expansion *before* expanding the tubular rivet against the sides of the holes in the work although Huck (2) disclosed expanding the tubular rivet before forming

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[2] "Huck (2) is U.S. Patent No. 2,501,567 (C.A. App. 372a-382a).
[3] British Patent No. 531,125 (C.A. App. 369a-371a).
[4] U.S. Patent No. 2,372,222 (C.A. App. 422a-425a).

the blind tail. In his July 21, 1959 response to this Office Action Gapp for the first time added the limiting language to claim 16 reading "said blind head being of substantially uniform diameter throughout its length." (C.A. App. 359a, Pl. Ex. 3 p. 71) In remarks in support of this amendment Gapp went to great pains to distinguish his rivet and blind head of the stem thereof from those of Huck (2), Chobert and Mullgardt, including the following statements:

> "The rejection of claim 16 on Huck (2) in view of Mullgardt is not tenable, because Mullgardt's mode of operation and sequence is similar to Huck's and not to applicant's herein. Namely, the final clinching by Mullgardt is accomplished only by 'upsetting head 5'. The collar 8 is only intended to 'start' the upsetting; thereafter, the 'enlarged neck 6' expands the shank of the tubular member in the holes, and final upsetting is performed thereafter by the upsetting head. . . ." (Pl. Ex. 3 p. 74)
>
> "Hence the collars . . . of Mullgardt only 'start' the upsetting, but the tubular rivet is then expanded into the holes before the complete upsetting. . . ." (C.A. App. 362a, Pl. Ex. 3 p. 75)
>
> "Applicant further amended the claims herein so as to clearly differentiate from these references. Namely, applicant expressly included that the shank of the tubular rivet and the tail are of substantially the same outer diameter throughout their combined lengths and that the blind head is of substantially uniform diameter throughout its length, and such is not the case in Chobert, or in Huck (2), nor as to the stem of Mullgardt. These features in combination with the other limitations defined in the claims constitute a novel concept resulting in a new mode of operation of which neither Chobert nor Huck (2), nor Mullgardt, taken alone, would be capable." (C.A. App. 362a, Pl. Ex. 3 p. 75)

In other words, the very purpose and function of the "substantially uniform diameter" limitation is to preclude further expansion after clinching and after hole-filling has commenced. As discussed hereunder the Oympic-Lok rivet effects further expansion after clinching and hole-filling as in Mullgardt.

The District Court found that, "As a matter of fact, over a very small distance, the (blind head of) the Olympic rivet, instead of being of constant diameter, varies some fifteen percent." (A. 15a), and that, "There is an element of what plaintiff (Olympic) claims to be file wrapper estoppel in number 1. Clear at the end of the prosecution the patentee, Gapp zeroed in on this in differing from Huck." (A. 16a)

The District Court then proceeded to the conclusion that "from a point of view of what is to be accomplished the diameter of Gapp and Olympic are the same." (A. 16a)

Bearing importantly on sub-issue 1 are Olympic's proposed finding of fact 12 and the first two sentences of Olympic's proposed finding 15 (C.A. App. 50a) which were adopted by the District Court (C.A. App 47a) and which clearly and unequivocally support the above-quoted findings regarding variation in the Olympic-Lok blind head diameter and file wrapper estoppel.

The Court of Appeals concluded from the record that the phrase "substantially uniform diameter" was inserted to distinguish the functions of the Gapp blind head—"clamping first and then filling"—from previous patented devices cited by the Patent Office and that in view of the purpose and function and reason for amending the claim the finding of the District Court on sub-issue 1 was not clearly erroneous (A. 38a-39a). There was no further discussion of the prosecution of the Gapp patent.

Appendix E

As will be subsequently pointed out and amplified, sub-issue 1 ties in very closely with sub-issue 2 discussed hereunder.

Sub-Issue 2

As pointed out above claim 16 (issued claim 1) was added to the application by amendment on May 29, 1959 (C.A. App. 353a-354a, Pl. Ex. 3 pp. 50-51). In this amendment, the restrictive language "completely expand the rivet tail against the corners of the hole in the adjacent plate in a single head-forming operation to the finished size of said clinching tail" was employed for the first time. In the remarks in support of this amendment Gapp stated (Pl. Ex. 3 pp. 53-54):

> "Claim 16, in general, defines the rivet assembly the stem of which is capable of fully clinching the plates together and *forming the complete clinching tail on the rivet prior to wiredrawing* of the elongated enlarged head into the tubular rivet *and*, therefore, *prior to the expansion of the tubular rivet against the sides of the holes* in the plate. In contradistinction, Huck (2) teaches the forming of the complete clinching tail after the wiredrawing of the enlarged portion into the tubular rivet and, therefore, subsequent to the expanding of the tubular rivet against the sides of the holes in the plates." (Emphasis supplied)

And again (Pl. Ex. 3 p. 56):

> ". . . claim 16 sets forth the elements of applicant's rivet as having only one head, which is the elongated enlarged portion and which together with the tapered joining portion is such that upon reaching the region of the plate adjacent the tail *fully* clinches the plates together and forms the *complete* tulip in a single operation, *prior* to the wiredrawing of the elongated

> enlarged head into the tubular rivet and, therefore, prior to the expansion of the tubular rivet against the sides of the holes in the plate." (Emphasis in original)

The District Court found that the Olympic-Lok rivet "gets more tail at the end" and that "it is an equivalency at best, or at worst, depending on one's point of view." (A. 17a). Notwithstanding these findings the District Court concluded that even though the Olympic-Lok rivet does not completely expand the rivet tail in a single head-forming operation to the finished size of said tail and that Olympic's diameter "gets more tail at the end," this "serves absolutely no purpose" and "both perform the same function in the same way and the additions do not change anything." (A. 17a).

The District Court adopted Olympic's proposed finding of fact No. 17 (C.A. App. 47a, 51a) that only partial tail formation is effected prior to hole filling in the Olympic-Lok rivet.

The Court of Appeals held that the District Court's finding of equivalence on sub-issue 2 was not clearly erroneous (A. 41a) and the sub-issue 2 limitation did not pertain to the inventive step but rather to mere environment (A. 40a). It stated that the Olympic-Lok device does not appear to be a literal infringement on the language of the Gapp claim (A. 40a), but did not specifically discuss or comment on the prosecution history of the Gapp patent with reference to sub-issue 2.

Sub-Issue 3

It is a requirement of claim 1 of the Gapp patent (reproduced supra pp. 4-5 of this Petition) that "said joining portion and said blind head are pulled into and *through* said *tubular rivet*." (Emphasis supplied)

Appendix E

"Said tubular rivet" is defined (lines 5-7 of the reproduced claim, supra pp. 4-5) as "having a shank *and a head* on one end of the shank." (Emphasis supplied)

Thus, since "said tubular rivet" *includes the head* the plain and unequivocal language of the claim requires that the joining portion and the blind head *must* be pulled into and through the head as well as the shank, in order to be pulled into and through the tubular rivet. It does not say into and through *just* the shank, or *just* into or *just* through the tubular rivet, nor just *partly* into and through the tubular rivet, but "into and through said tubular rivet," plainly and unequivocally defined as including the head as well as the shank.

It should be mentioned at this point that the joining portion is the tapered portion of the rivet stem lying between the pulling portion of the stem and the enlarged blind head.

Here again the limiting terminology "into and through" did not appear in any claim until claim 16 was added by amendment on May 29, 1959.

In the May 29, 1959 amendment, a claim 18 was also added. (C.A. App. 354a-355a, Pl. Ex. 3 pp. 51-52) Claim 18 was described in Gapp's remarks accompanying the amendment as:

> ". . . a method claim which defines the steps of completely expanding the rivet tail and fully clinching the plates together and then and only thereafter expanding the tubular rivet against the sides of the holes by wiredrawing the clinching tapered joining portion and the elongated enlarged head of the rivet, and *stopping* said wiredrawing at the rivet head. . . ." (Emphasis in original) (Pl. Ex. 3 p. 57)

After further discussing this claim with reference to Huck (2), Gapp concluded with the statement:

"Such novel steps performed in a novel sequence, while relying *in part* on the structure of the rivet, are believed to constitute true method steps apart from the rivet per se. . . ." (Emphasis supplied) (Pl. Ex. 3 p. 58)

The claim was subsequently amended by deletion of certain language but retaining the quoted portion above. The Examiner in an Office Action issued July 29, 1959 stated that "claim 18 is considered to recite no more than the obvious and expected use of the rivet of claim 16." (C.A. App. 363a, Pl. Ex. 3 p. 78). Gapp cancelled claim 18 on July 3, 1959 without comment, except to state that the cancellation was without prejudice and in compliance with the Examiner's suggestions (C.A. App. 365a, Pl. Ex. 3 pp. 80, 82).

The District Court found that "into and through" means "some part of that thing going through and out" (A. 17a); that the Gapp patent illustrates the "joining tapered portion completely through and out of and above the top of the head of the tubular rivet." (A. 17a-18a); that this was described as an advantage in the initial formal description of the invention: "So long as the shoulder of the stem plug section is visible above the rivet head, it is certain that a full upset head (blind head) has formed tightly against the blind side sheet." (A. 18a); that "the drawings, as well as the description of how the thing works in the Gapp patent, depict the shoulder, and for that matter a little part of the head *above* the top of the rivet head and speak of just that." (Emphasis in original) (A. 18a); and that ". . . as a matter of fact, not only does Olympic in practice not result in the collar going through the rivet head, but. . . ." (A. 18a). The District Court therefore concluded that " 'Through' used in the meticulousness of this claim, read in the light of the specifications and the

drawings and history of the invention, we cannot sweep under the rug either per se or equivalently." (A. 19a), and there was no infringement.

The Court of Appeals held that the District Court's findings on sub-issue 3 were clearly erroneous and stated that this sub-issue deals with "interpretation of the claim and a charge of literal infringement," not equivalency (A. 31a). It considered the file wrapper history as an aid to interpreting the claim (A. 31a). It concluded that cancellation of claim 18 was not an abandonment of that embodiment because the Examiner said it was "considered to recite no more than the obvious and expected use of the rivet of claim 16" (A. 29a-30a); that the embodiment of Figure 4 showing a flush-breaking stem was not abandoned (A. 29a-30a); and that facility of inspection did not require that any portion of the blind head be visible above the exposed head and was furthermore "no part of the surprise of the invention." (A. 31a-32a).

The Court of Appeals then stated (A. 32a) that: "In both the Gapp device and the Olympic-Lok rivet the joining portion and wiredrawn blind head are pulled *through the full length of the tubular rivet.*" (Emphasis supplied). This finding is completely contrary to the definition of "tubular rivet" contained in the claim itself (see portion of claim bridging pages 4-5, supra), as well as contrary to the findings of the District Court that the Olympic collar does not go through the rivet head, as will be clearly evident from Pl. Ex. 10A-10E (C.A. App. 384a-388a), with particular reference to the fully installed position shown in Pl. Ex. 10E (C.A. App. 388a).